

Serial No.: 10/587,810
Office Action dated: July 2, 2009
Response to Office Action dated: October 2, 2009

AMENDMENTS TO THE DRAWINGS

Please replace the previous Sheets 1/7 and 2/7 with the enclosed Replacement Sheets 1/9 and 2/9.

Please add new drawing Sheets 8/9 and 9/9.

REMARKS

This Amendment and Response is submitted in reply to the Office Action dated July 2, 2009. In the Office Action, the Examiner made the following rejections and objections:

- Claims 26-52 are rejected under 35 U.S.C. § 112(1) for failing to enable the claimed inventions;
- Claim 29 is objected to due to the use of a formula;
- Claims 26-30, 34, 37 and 42-43 are rejected under 35 U.S.C. § 102(b) as being anticipated by WO 90/15377 to Van De Moortele (hereinafter "Van De Moortele");
- Claims 31 and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Van De Moortele in view of U.S. Published Patent Application No. 2001/0002598 to Van't Hoff (hereinafter "Van't Hoff #1");
- Claims 35-36 and 38 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Van De Moortele; and
- Claims 39-41 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Van De Moortele in view of U.S. Published Patent Application No. 2003/0075568 to Van't Hoff (hereinafter "Van't Hoff #2").

Applicants address each of these rejections in turn below.

In the Office Action, the Examiner also objected to the Drawings under 37 C.F.R. § 1.83(a) as insufficiently illustrating Applicants' invention. Applicants address this objection below in connection with amended and new drawings, as well as with reference to the specification.

In the Office Action, claims 26-52 were pending. Applicants hereby amend claim 29. Claims 26 and 44 are independent claims. Claims 26-52 are presented for consideration in light of the following remarks.

Allowable Subject Matter

As an initial matter, in the Office Action, the Examiner indicated that claims 33 and 44-52 contained allowable subject matter. Indeed, the Examiner indicated that claims 44-52 would be allowed if Applicants overcame the rejections under 35 U.S.C. § 112(1). Further, the Examiner indicated that claim 33 would be allowed if Applicants overcame the Section 112(1) rejections, as well as if the claim was

rewritten in independent form to include all of the limitations of claims from which it depends (namely, claims 26 and 30).

Applicants appreciate the Examiner's confirmation of the allowable content of these claims. Applicants submit that the amended and new drawings submitted herewith address the Examiner's concerns under Section 112(1), as further discussed below, such that claims 44-52 should be formally allowed. Additionally, Applicants submit that claim 33 is also allowable as written, inasmuch as Applicants traverse the Section 102 rejection rendered against claims 26 and 30 below.

Objections to the Drawings under 37 C.F.R. § 1.83(a)

In the Office Action, the Examiner objected to the Drawings to the extent that they fail to show the boundary between the second fluid chamber 7 and the first fluid chamber 16, and the path of the fluid communication from the second fluid chamber 7 past the first fluid chamber 16 and through the pressure control device to achieve a pressure equilibrium. The Examiner has requested amended or additional drawings clearly illustrating how the fluid leaves the second fluid chamber 7 and travels to the volume of space below the flexible piston 52. In accordance with this request, Applicants have amended FIG. 2 in compliance with 37 C.F.R. § 1.121(d) to illustrate the path of the fluid communication within the pressure control device 1.

As shown in FIGS. 1 and 2 and noted in the specification, the first chamber 16 is defined by the space between a cup-like piston 13 and a cup-like cylinder 15. (See Application, ¶ [0016]). These components are parts of an insert 5 having a step-like funnel 6 that is mounted on a cylinder 2. (See FIG. 1). The second chamber 7 is formed within the cylinder 2. (See Application, ¶ [0016]). Thus, the insert 5, the funnel 6 and the piston 13 mounted therein, forms, in part, a boundary between the first chamber 16 and the second chamber 7.

The path of fluid communication flows from the second chamber 7, through a valve 25 and past the first chamber 16 as shown in amended FIG. 2 by arrows A. Original Paragraph [0017] describes this passageway in detail. Specifically, the cup-like cylinder 15 is enclosed by a cylindrical cup 27, which is mounted within the funnel 6. As noted in the specification,

[A] number of L-shaped small projections or ribs ... are provided on the inside of the funnel 6 which are equally distanced from each other. The projections or ribs are provided at the lateral and the bottom side of the

funnel 6. Therefore, there is a space between the cylindrical cup 27 and the funnel 6, which defines a passageway from opening 12 up to the upper side of the insert 5.

Thus, it is clear from the original description that there are small openings or slits between L-shaped projections and between the bottom and sidewalls of the funnel 6 and the cylindrical cup 27 which form passageways for fluid in the pressure control device 1.

Additionally, original Paragraph [0020], with reference to FIG. 4, notes:

In Figure 4 ... the construction of the cup 27 with crown 28 can be seen more properly. One can further see that the stem 17 has two grooves 40 and 41, which are provided at opposite sides of the stem 17. In continuation of grooves 40 and 41 there are provided in opposite directions two grooves 42 and 43 at the underside of the piston 13. Thus, in the open position of valve 25, where the piston 13 is lying on the bottom side of the funnel 6 [see Figure 2], there is a passageway from the open valve 25 along the inner bottom side and the lateral side of funnel 6 over the openings 29 of crown 28 up to the top of insert 5.

To further aid in illustrating the path of fluid communication, Applicants add new FIGS. 8-10, providing cross-sectional and perspective views of the insert 5 and cylindrical clamping means 26 of the pressure control device of FIG. 1 showing the relationship between the funnel 6 and the cylinder 27, illustrating the previously described L-shaped projections or ribs 38, and illustrating further the path of fluid around the cylindrical clamping means 26 and over and through the openings 29 in the crown 28.

Applicants have correspondingly amended the specification to clarify the amendments to the drawings, where necessary. Applicants submit that no new matter has been added to make these clarifications.

Applicants submit that the Examiner's concerns regarding the drawings have been fully addressed and that the disclosed invention is clear to a person of ordinary skill in the art. Accordingly, Applicants request that the objection under 37 C.F.R. § 1.83(a) be withdrawn.

Rejection of Claims 26-52 under 35 U.S.C. § 112(1)

In the Office Action, the Examiner rejected claims 26-52 under Section 112(1) because the specification, as filed, does not reasonably provide an enabling disclosure for building a device that uses the described fluid path from the second

chamber 7. In general, this rejection is related to the Examiner's objection to the Drawings. As noted above, Applicants have addressed the Examiner's concerns regarding the drawings. As a result, Applicants submit that the concerns with the specification have also been addressed such that the disclosure in the specification is enabling and commensurate with the scope of the claims.

Accordingly, Applicants request that the rejection of the claims under 35 U.S.C. § 112(1) be withdrawn.

Objection to Claim 29

In the Office Action, the Examiner objected to the language of claim 29 to the extent that it recites a formula. The Examiner suggested that Applicants amend claim 29 to write out the formula. As suggested, Applicants have amended claim 29 and accordingly request that the objection to this claim be withdrawn.

Correction of Typographical Errors

Applicants have amended the specification and FIG. 1 to correct clear typographical errors. Specifically, in Paragraph [0016] of the specification, there is an erroneous reference to "a valve 24". This reference numeral was already used to identify the upper rim of the cylindrical end portion 18 of the piston 13. Further, the "valve" is consistently associated throughout the specification and Figures with reference numeral 25. (See, e.g., Application, ¶¶ [0019], [0020], [0022], FIGS. 2, 3). Accordingly, Applicants have amended Paragraph [0016] to properly reference "a valve 25".

Applicants have also corrected FIG. 1 to properly show valve 25 as well as upper rim 24. Further, Applicants have corrected an error in FIG. 1 – namely, reference numerals 29 and 30 have been switched to coordinate with the description in Paragraph [0017]. Applicants submit that no new matter has been added by these amendments.

Rejection of Claims 26-30, 34, 37 and 42-43 under 35 U.S.C. § 102(b)

In the Office Action, the Examiner rejected claims 26-30, 34, 37 and 42-43 under Section 102(b) as being anticipated by Van De Moortele. A rejection under Section 102(b) is improper unless a single prior art reference shows, teaches or

suggests each and every claim recitation. Applicants submit the Van De Moortele is not a proper reference under Section 102(b), because it fails to show, teach or suggest each and every recitation of Applicants' claims.

In general, the invention of independent claim 26 is directed to a pressure control device in a pressure control system for maintaining a constant predetermined excess pressure arranged in a fluid dispensing container. The pressure control device comprises, in part, a cylinder having an open end and a closed end, with a piston movable within the cylinder and defining a first chamber to be filled with a gas for exerting a predetermined excess pressure. The pressure control device also comprises, in part, a second chamber, a passageway from the second chamber to the outside of the device leading to the fluid dispensing container, and a valve for releasing and closing the passageway.

WO 90/15377 to Van De Moortele is directed to a pressure regulator 8 for spray cans that comprises a flexible membrane 10 controlling a valve 9 disposed between a pressure reservoir 6 and a dispersal reservoir 1. The valve 9 is connected to the membrane 10 by a valve spindle 13 and both are placed in the fluid passageway (chamber 14) between the pressure reservoir 6 and the dispersal reservoir 1. The passageway 12 is provided in a wall of the chamber 14, which is connected with the dispersal reservoir 1 via openings 15. An O-ring 16 is provided around the chamber 14 at the location of the openings and "exclusively performs the function of nonreturn valve." (Van De Moortele, page 3, line 24 to page 4, line 1 (emphasis added)).

The elasticity of the flexible membrane 10 controls operation of the valve 9 – e.g., a high pressure condition in the pressure reservoir relative to the chamber 14 and the dispersal reservoir 1 causes the membrane 10 to stretch out (see Van De Moortele, FIG. 2) and pull the valve 9 closed, presumably when the dispersal reservoir 1 has reached a desired pressure level. The flexible membrane 10 is forced downward to reopen the valve 9 as soon as the pressure level in the dispersal reservoir 1 and the chamber 14 falls under a defined value. A chamber 17 is also situated above the flexible membrane 10 to prevent the pressure from the dispersal reservoir 1 from acting on the top of the membrane 10. (See Van De Moortele, FIGS. 1, 2). Additionally, Van De Moortele emphasizes that no springs nor any gas under well defined pressure need to be provided in the chamber 17 to control the operation

of the valve 9, stating that “[i]t is also clear that an atmospheric pressure normally prevails in the chamber” (Van De Moortele, page 4, lines 5-14).

Applicants contend that the Examiner has misinterpreted the scope of the Van De Moortele disclosure. The Van De Moortele pressure regulator 8 appears to control the pressure in a spray can much in the same general manner as known in the art. (See Application, ¶¶ [0002]-[0004]). However, as with such prior art, the structure of the Van De Moortele pressure regulator does not match the structure shown and claimed in the present Application. For example, Van De Moortele fails to show, teach or suggest a cylinder having an open end and a closed end, and a piston movable within said cylinder defining a first chamber to be filled with a gas for exerting a predetermined excess pressure, as recited in Applicants’ claim 26.

Additionally, as disclosed by Van De Moortele, the O-ring 16 is a nonreturn valve. Accordingly, there must remain an overpressure in the chamber 14 with respect to the pressure in the dispersal reservoir 1 of the spray can. Thus, the gas pressure in the dispersal reservoir 1 is not equalized to a predetermined excess pressure in a first chamber, as required by claim 26. In this regard, Van De Moortele clearly states that the pressure in chamber 17 is atmospheric. Thus, Van De Moortele does not show, teach or suggest the structure and operation of Applicants’ claimed invention.

Further, Van De Moortele does not show teach or suggest “a high-pressure container with ... an open end provided with a rim part” wherein “a closure is mounted to the rim part of the high-pressure container” to enclose not only a second chamber formed by the high-pressure container, but also to encompass a first chamber defined by a cylinder disposed within the open end of the high-pressure container. In Van De Moortele, the cylinder (i.e., “chamber 14”) is stacked on top of the second chamber “cylinder” (pressure reservoir 6), essentially acting as the closure, but not in such a way that the cylinder of the first chamber (“chamber 14”) is encompassed by the high pressure container (pressure reservoir 6). (See Van De Moortele, FIGS. 1-2). The chamber 17 – which is not a “first chamber” in the sense of the present invention – is also not even part of the closure such that the high-pressure container (pressure reservoir 6) could encompass the chamber 17. Accordingly, Van De Moortele does not show, teach or suggest a high-pressure container encompassing the cylinder of the first chamber.

There are numerous structural differences between Applicants' claimed invention and the devices shown taught, or suggested by the Van De Moortele disclosure. Accordingly, Applicants submit that claim 26 is novel over Van De Moortele and should be allowed.

Claims 27-30, 34, 37 and 42-43 depend, either directly or indirectly, from claim 26. Accordingly, Applicants respectfully submit that the rejection of these claims under 35 U.S.C. § 102(b) as being anticipated by Van De Moortele is improper for at least the above-identified reasons, and should be withdrawn.

Rejection of Claims 31 and 32 under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejected claims 31 and 32 under Section 103(a) as being unpatentable over Van De Moortele in view of Van't Hoff #1. A rejection under Section 103(a) is improper unless the Examiner establishes a *prima facie* case of obviousness. A *prima facie* case of obviousness is not established unless the prior art references, either alone or in combination, teach or suggest **each and every** claim recitation.

The Examiner acknowledges that Van De Moortele does not show, teach or suggest the limitations of claims 31 and 32 relating to an upper end of the high-pressure container having a tapered neck portion (claim 31) or an inwardly directed step-like funnel (claim 32). The Examiner cites Van't Hoff #1 to provide the missing structure for these claims.

As noted above, Van De Moortele does not show, teach or suggest each and every recitation of independent claim 26 from which claims 31 and 32 indirectly depend. The disclosure of Van't Hoff #1 does not supply the missing recitations so as to eliminate all deficiencies of Van De Moortele.

Van't Hoff #1 is directed to a pressure control regulator 1 wherein a first chamber 4 is separated from a second chamber 6 by a first closing member 8' and a second closing member 8''. In FIGS. 6a and 6b of Van't Hoff #1, first closing member 8' is shown as a ball, while second closing member 8'' is shown as a plunger. Both closing member 8' and 8'' are housed in the cylinder 10 above the chamber 4. The upper end of the first chamber 4 has a tapered neck portion and a step-like funnel that seats the cylinder 10 housing the second chamber 6. It is clear, however, that the cylinder 10 acts as a closure for the first chamber 4, but does not extend beneath the

“neck” or “funnel” or any “rim part” of the lower container. (See, e.g., Van’t Hoff #1, ¶ [0029] (“It is noted that in this example too, the cylinder 10 extends substantially in the inner space 2 of the container and the second chamber 6 is positioned outside the first chamber 4.”) (emphasis added))). Thus, much like Van De Moortele, Van’t Hoff #1 does not contemplate encompassing a cylinder housing a chamber within a container housing another chamber. Accordingly, a combination of Van De Moortele with Van’t Hoff #1 does not result in the structure of the present invention.

Applicants respectfully submit that the rejection of claims 31 and 32 under 35 U.S.C. §103(a) as being obvious over Van De Moortele in view of Van’t Hoff #1 is improper for at least the above reasons, and should be withdrawn.

Rejection of Claims 35-36 and 38 under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejected claims 35-36 and 38 under Section 103(a) as being unpatentable over Van De Moortele. The Examiner acknowledges that Van De Moortele does not show, teach or suggest the limitations of claims 35-36 and 38 relating to the high-pressure container being made of a plastic material by injection blow moulding (claim 35), being made of PET (claim 36), or being laser welded to the inner wall of the fluid dispensing container (claim 38). The Examiner contends that these limitations are matters of routine design choice.

As noted above, Van De Moortele does not show, teach or suggest each and every recitation of independent claim 26 from which claims 35-36 and 38 depend. Accordingly, Applicants submit that matters of routine design choice cannot correct the deficiencies of Van De Moortele with respect to at least independent claim 26. Thus, Applicants respectfully submit that the rejection of claims 35-36 and 38 under 35 U.S.C. §103(a) as being obvious over Van De Moortele is improper for at least the above reasons, and should be withdrawn.

Rejection of Claims 39-41 under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejected claims 39-41 under Section 103(a) as being unpatentable over Van De Moortele in view of Van’t Hoff #2. The Examiner acknowledges that Van De Moortele does not show, teach or suggest the limitations of claims 39-41 relating separating fluid and gas within a fluid dispensing

container by a movable piston. The Examiner cites Van't Hoff #2 to provide the missing structure for these claims.

As noted above, Van De Moortele does not show, teach or suggest each and every recitation of independent claim 26 from which claims 39-41 indirectly depend. The disclosure of Van't Hoff #2 does not supply the missing recitations so as to eliminate all deficiencies of Van De Moortele.

Van't Hoff #2 is directed to a pressure control device for maintaining a constant predetermined pressure in an aerosol can. The pressure control device 1 comprises a first chamber 4 and a second chamber 6. As with the other references cited by the Examiner, the second chamber is located away from the space enclosed by the first chamber. (See Van't Hoff #2, ¶ [0023]). Accordingly, a combination of Van De Moortele with Van't Hoff #1 does not result in the structure of the present invention.

Applicants respectfully submit that the rejection of claims 39-41 under 35 U.S.C. §103(a) as being obvious over Van De Moortele in view of Van't Hoff #1 is improper for at least the above reasons, and should be withdrawn.

Conclusion

Applicants respectfully submit that nothing in the current Amendment constitutes new matter. Support for the amendments to the claims, specification and drawings may be found in, at least, Paragraphs [0016], [0017], [0020] and [0023] and original FIGS. 1, 2 and 4.

Having traversed each and every objection and rejection, Applicants respectfully request claims 26-52 be passed to issue.

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Applicants believe that no fees are due in connection with this Amendment and Response. If any fees are deemed necessary, please charge them to Deposit Account 13-0235.

Respectfully submitted,

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